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Training of Blind Persons to Operate Telephone Switchboards

The Paolo Colosimo Institute for the Blind, Naples, Italy

A Census and Economic Survey of the Blind in California

VOCATIONAL REHABILITATION

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TRAINING OF BLIND PERSONS TO OPERATE TELEPHONE SWITCHBOARDS

For some time the Rehabilitation Service of the United States Office of Education has been interested in the possibility of training blind persons to operate small telephone switchboards. This document is submitted to State officers engaged in the vocational rehabilitation of disabled persons and to others who are interested in the training of the blind, to acquaint them with what has been done in the field of training of blind operators of telephone switchboards, with what further developments are contemplated, and what procedures should be followed to carry on such a project.

Developments to Date

For the past six years Mr. Carl C. Wiley, Placement Officer for the Blind, of the Illinois Department of Welfare, located at the State School for the Blind, Jacksonville, Illinois, has been successful in training and placing blind persons in telephone switchboard operation.

Mr. Wiley reports that he has successfully trained and placed about thirty blind persons as telephone switchboard operators. Most of these persons have been placed as operators in various State institutions, but a few of them are to be found in commercial establishments or as operators of boards in rural communities.

The feasibility of operation of small switchboards by the blind has been demonstrated beyond question. As will be noted, later, however, the possibilities for employment of the blind in this field are much limited, but with the development of the rehabilitation program in general and the training or fitting of the blind for employment in particular, the opportunity for placement of the blind in telephone switchboard work will unquestionably be expanded.

Sometime ago Mr. Wiley made a proposal to the Rehabilitation Service of the Office of Education that his plan of training blind persons for switchboard operation be established in other States and that he would be glad to offer his services.

Consequently a meeting was called last fall in the city of Chicago to which were invited representatives of the following:- State commissions for the blind, State schools for the blind, and State rehabilitation departments. At this meeting Mr. Wiley outlined his plan and demonstrated an appliance which must be attached to a switchboard to enable a blind person to operate it. This meeting resulted in the appointment of an advisory committee consisting of the following:

C. L. Broun, State Commission for the Blind, New York
Bradley S. Joyce, Superintendent, Western Pennsylvania School for the Blind
Robert Irwin, American Foundation for the Blind
Mark Walter, Director of Rehabilitation, State of Pennsylvania
Carl C. Wiley, Placement Officer for the Blind, Department of Public Welfare, Illinois
John A. Kratz, Chief of Vocational Rehabilitation, U. S. Office of Education

Since this meeting, the advisory committee has had two meetings. Another meeting is scheduled to be held in Washington, D. C. next fall at the time of the annual meeting of the National Rehabilitation Association. This committee will continue to investigate the proposed plan of training, the possibilities for employment of the blind in telephone switchboard operation, and the best basis upon which to project these training programs throughout the country. The function of the committee is simply advisory, as naturally the committee has no legal or official status.

In the meantime in several of the States projects have been initiated or are contemplated. For example, in Kentucky last May and June, a six or eight weeks training course was given in the School for the Blind at Louisville, in cooperation with the vocational rehabilitation division of the State Department of Education, for seven or eight selected blind young women who are graduates of the school. With Mr. Wiley as instructor, these students were trained to operate a telephone switchboard and in such collateral functions as information clerk, filing clerk, keeping of records, taking of dictation in Braille, and the like.

At the beginning of the current month a similar class was begun in the State of Indiana, to be followed later by one in Texas. A number of State schools for the blind and State rehabilitation departments have expressed interest in this program. It was discussed at the regional conferences on vocational rehabilitation held last spring under the auspices of the Office of Education. A description of the factors entering into such a training program, as well as of the factors which are involved in the employment of the blind in telephone switchboard operation, follows.

Mechanical Equipment Needed

Operation of a telephone switchboard by a blind operator requires the use of a special attachment to the board. The one most successfully used in Mr. Carl C. Wiley's work is known as the "Watson Touch Pilot Equipment", which is manufactured at his school. This equipment can be attached only to boards owned and operated by private concerns or State institutions. Boards owned and operated by the Bell System and subsidiaries of the American Telephone and Telegraph Company must be equipped with an attachment made for this company and owned and maintained by it. The two attachments are similar in operation. The special attachment does not interfere with operation of the board by a sighted operator. The attachment manufactured at the State School for the Blind in Illinois may be purchased outright, becoming the property of the agency or institution which owns the switchboard to which it is attached. It is a part of Mr. Wiley's program to train blind persons to make these equipments. Information on cost and procurement of such attachments may be secured from Mr. Carl C. Wiley, State School for the Blind, Jacksonville, Illinois.

Attachments made for the Bell Companies can not be purchased. They must be rented, just as is the general telephone switchboards and equipment maintained by these companies. Information on installation charges,

rental charges, and the like for such equipment can be secured by applying to the Commercial Manager of the Bell Company in the city or territory in which it is desired to have such installation made.

The use of either equipment is limited to small telephone switchboards such as those commonly designated as PBX boards. Operation by a blind person of a board having more than 320 lines is not feasible.

Training Equipment Needed

In order to train blind operators for switchboard operation in a school, the following is the minimum equipment needed:

2 PBX boards
2 Special attachments

Such equipment permits the sending and receiving of calls and provides for instruction and practice by two students at one time. As will be explained later, if the operator is to be trained "on the job" only one board and one special attachment is needed, provided, of course, the board is in active use on a business basis and connected with a telephone system.

Types of Training Programs

In general there are two types of programs feasible for training blind persons to operate telephone switchboards. These may be designated as school and as placement training. The former is a much more comprehensive program than is the latter. In the former in addition to training in operation of the board, the student is trained for certain types of clerical work generally required in addition to mere switchboard operation. Reference is had to rapid Braille writing, typing, filing, making of reports and records, and taking and delivering of telegrams and giving of general office information. These latter require as much if not more time than the acquisition of the required speed of telephone operation. Such a course requires from eight to twelve weeks.

If, however, the trainee has been given this collateral instruction or has acquired it through other means, the actual operation of the attachment and the switchboard may be learned in a much shorter time. The best means of providing such training is actually on a board under the tutelage of a trained operator. This method is explained later under the caption "Cooperation by the Bell Companies".

Availability of Equipment

Twelve special attachments have been manufactured and arenow ready for use under the auspices of the subsidiaries of the American Telephone and Telegraph Company. These will be placed in use as requests are made for them, and more of the machines will be produced as they are needed and can be absorbed under the auspices of the various State and private agencies who are interested in the training and placement of the blind.

In so far as attachments for non-Bell System operated telephone boards are concerned, there is no doubt as to the possibility of meeting current needs.

Qualifications Required of Operators

Naturally selection of trainees for switchboard operation should be made with the utmost care. Persons with less than high school education should only in very exceptional cases be considered. Good hearing and memory, as well as a pleasing personality and a pleasant voice, are essential. In general, physical disability of the hands or arms would constitute a debarring factor. An operating capacity of from four to five hundred calls per hour is required. Subscribers to telephone service expect maximum service, hence accuracy and speed are required.

Furthermore, personal appearance and attitude are most important. Operators must be polite, courteous, and ready to give prompt and efficient service. They must at all times be on the alert and ready to give such assistance to the users of the telephone as may reasonably be expected.

And finally the switchboard operator is called upon in many establishments to perform other duties besides those of making connections for calls. A blind person who cannot be trained to keep records, take notes, and perform other collateral duties should not be selected for telephone switchboard work.

Employment Opportunities

It has been estimated that there are in operation in the United States 1,500,000 switchboards of not more than 320 lines. Naturally the bulk of these are located in public institutions and departments and in industrial and commercial establishments where the operators in many instances have other duties such as that of information clerk, typist, file clerk, and so forth, or some combination of these functions. No one has been able as yet to ascertain what proportion of these boards could be operated by blind persons if the employing agencies were agreeable. As the possibilities are surveyed it is a natural conclusion that a considerable number of them could be satisfactorily handled by blind operators.

However, before any considerable number of employment opportunities for the blind in this field can be developed, a great deal of explorative and educational work will have to be done. This is a matter which should challenge rehabilitation workers and special workers for the blind. Progress will have to be made slowly. Many heads of institutions, schools, State departments, and others will have to be contacted, the possibilities explained, and even the operation of the special attachment demonstrated before placement opportunities are developed. At times blind operators will be required to demonstrate their ability and capacity to undertake the work, but much can be accomplished through energetic and patient application to the problem. Naturally successful experience in one, two, or three instances will make further placements a little less difficult.

If, however, the various agencies interested in the blind will unite their efforts on the individual case a great deal more will be accomplished than through non-cooperative effort.

Cooperation by Telephone Companies

The headquarters office of the American Telephone and Telegraph Company is interested in this problem. Their telephone engineers have developed the special attachment for Bell-operated boards, and the companies are ready to distribute them as needed. The Training Department of the American Telephone and Telegraph Company is thoroughly sympathetic and ready to give every reasonable assistance. Mr. G. L. Whiteman, who is in charge, has most generously proffered assistance by his division in placement-training of blind operators.

Mr. Whiteman has stated that it requires but two or three days to train a sighted person to operate a PBX board, and he believes that a carefully selected blind person could learn to operate such a board with the special attachment in about a week. In this connection, his office through the local companies is in a position to furnish the instructor, but he suggests that at the time such instruction is given, either the rehabilitation department or the school for the blind, or other agency working with the blind, should furnish for collateral instruction at the same time, a teacher who is experienced in working with the blind. Thus a training representative of the local telephone company, and a teacher of the blind, working together or cooperatively, should be able to provide all needed training to prepare a blind person to operate a board.

Naturally, as stated before, some agency would have to be responsible for providing such additional training as is needed in most cases to prepare the trainee for such other duties as are required in connection with switchboard operation. Consequently prior to the training in actual board operation the rehabilitation department or cooperating agency will have to provide such preliminary training.

In this connection, also, it should be noted that the telephone companies will not undertake to find or locate employment opportunities. Therefore, it will be the responsibility of the rehabilitation or other agency to locate the placement opening, secure the cooperation of the employer, and make all other necessary employment arrangements before the telephone company is requested to provide an instructor. If such prerequisite factors are not attended to, a placement training program for a blind operator cannot be successfully undertaken.

Possibilities in Small Rural Exchanges

There are a number of instances in which blind persons are operating small rural exhhanges. In many such exchanges the so-called "drop" board is used. A blind operator does not require a special attachment for such a board. Some method of labeling the drops with Braille characters is used so the operator can readily locate the "plugs" for incoming and outgoing calls. An experienced blind operator of such a board learns to

identify many of the drops by the character of the sound they make. Experience shows, too, that such operators can keep the records required in the job. Such exchanges are located in the home of the operator who naturally must have a person in the home who can provide necessary relief. Telephone companies who maintain such exchanges provide regular weekly relief periods for the operator. Thus, for certain types of blind persons, preferably married men, the operation of such an exchange provides a satisfactory livelihood and a vocation well suited to the disability.

Success Factors in the Training of the Blind for Telephone Switchboard Operation

In conclusion, it is believed that the field of telephone switchboard operation holds limited but considerable opportunity for certain types of blind persons. Such persons must be most carefully selected and must have certain well-defined qualifications required in the work. The most important preliminary factor is to secure an agency or individual who is willing to provide employment for the blind person. After this has been accomplished, a training program can be set up to prepare the person for the work. Careful supervision throughout the training period and follow-up after training will be required to insure success.

One important consideration should be kept constantly in mind. Results will have to be accomplished slowly and patiently. The hopes of the blind should not be aroused to the extent that many disappointments will follow because of inability of rehabilitation departments and cooperating agencies to find placement opportunities for large numbers of their blind clients. Telephone switchboard operation will not solve the employment problem for the blind. It does, however, offer a considerable field, and rehabilitation departments will do well to explore it as far as possible as one of the methods of effecting rehabilitation for the blind.

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THE PAOLO COLOSIMO INSTITUTE FOR THE BLIND

The Office of Education in the Department of the Interior is indebted to the Department of State for receipt of a report on the Paolo Colosimo Institute for the Blind in Naples, Italy, prepared by the American Vice Consul, Homer M. Byington, Jr., and approved by the American Consul, Charles Bridgham Hosmer at Naples, Italy.

In the thought that agencies concerned with the training of the Blind in the United States will find interesting the advanced progress that has been made in this institute, the following extracts from the report are submitted:

The Growth and Development of the Institute.

Founded in 1913 on a very small scale by Donna Tommasina Colosimo in the name of her son, Paolo Colosimo, the history of this institute for the blind is an example of what can be accomplished in the field through painstaking devotion, good instruction, and able management. The first demands of a large nature that began to be made upon the Institute were the numbers of soldiers who were blinded in the war from 1915 on. In June 1915 the first veterans were received, and fine results were obtained in the technical practice they were taught.

From the time of its foundation the Institute had been largely supported by private funds solicited through its founder, Donna Colosimo. In this connection it is interesting to note that at one of the most difficult periods of the Institute's development a large contribution from an American source, the Metropolitan Opera House, played an important part. At the close of the war a special concert was held at the Metropolitan Opera House in New York, the proceeds of which were given to the Colosimo Institute for the Blind. In 1929 the present quarters were obtained through the assistance of a loan of four million lire at a minimum interest rate from the Banco di Napoli. This establishment was the ex-cloister of the convent, Santa Teresa agli Studi.

Under the direction of Comm. Pericle Rosco, the work of the school has received considerable commendation, winning a gold medal at the exhibition in Rome in 1916, the great prize in Florence in 1917, and the single diploma of honor at the Rome exhibition of 1918. In 1918 the work of weaving which has become famous was begun by the installing of looms.

Description of the Institute's Equipment.

The building occupied by the Institute is, as stated, the old convent of the nuns of Santa Teresa, which has been completely done over to accommodate some 500 blind. It is a hugh building with a big garden for the recreation of the blind.

The quarters are spacious and airy and the dormitories immaculately clean. There is fine equipment for book binding, a machine shop, and many looms for weaving, also a Braille library and an inside cloister for walking in the winter.

Qualifications for Admission.

Only males are admitted. The blind from Naples itself who are without funds are accepted free; while those from outside are expected to pay a small sum unless special arrangements are made for them. At the present time the Institute does not receive assistance from the State.

Type of Training Given the Blind.

The average course of training requires about eight years. There is a school for elementary work in which the blind are tought to read and write in Braille and the blind and deaf are taught to speak. An effort is made to develop the newcomer along those lines in which he may show aptitude. In this connection there are several students who are doing university work through the facilities afforded them by the library. There are one or two music students of unusual ability and several learning office work. The majority are put to work at weaving, bookbinding, or basket-making. In each of these types of work they are taught gradually and, as they progress, given more difficult tasks until one will find a blind man handling a complicated loom with as many as 16 to 20 spools or designing the patterns for intricate colored cloth. They are also trained in operating the looms to repair all threads that break, and all the designs of the cloth are done by them. Excellent bookbinding is accomplished in the bindery, and the product would grace any library. For those who show special ability along artistic lines there is a course of training in making wooden objects or sculpture, and a quantity of beautiful works of art have been produced - some of ebony and coral that are quite striking. After the course of eight years has been completed the average man is able to earn a living outside of the Institute. In addition, the Institute has steady income from the sale of its cloths, wooden ornaments and beautifully-made baskets on a quality basis.

The Results Obtained from the Training Given.

Particularly in the weaving has the success of the blind been extraordinary. The beauty of the workmanship and design is astonishing. Also the bookbinding and objects of art are very finely done and often are distinctly superior to the same type of work found on the local market. The spirit prevailing in the institution itself is one of docility, surprising cheerfulness, and great industry.

General Remarks.

There is a keen interest in the United States and a desire to exchange students with similar American institutions. The life of Helen Keller is well known and admired and the part that the contribution from the Metropolitan Opera House has played in the financial development of the Institute is keenly appreciated.

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A CENSUS AND ECONOMIC SURVEY OF THE BLIND IN CALIFORNIA

During the past fiscal year there was conducted in the State of California a census and economic survey of the blind. The study was made possible through cooperation by the State Emergency Relief Administration and was sponsored by the Bureau of Rehabilitation of the State Department of Education and carried out in cooperation with the State Council for the Blind. Copies of the report of this study may be secured by application to Dr. Vierling Kersey, Superintendent of Public Instruction in California, or to H. D. Hicker, Chief of the Bureau of Rehabilitation.

The following excerpts from this report are submitted as of interest to rehabilitation workers and representatives of agencies engaged in work for the blind.

Purpose

The purpose of the survey was to ascertain the number of blind persons in California who are self-supporting; the number who are of employable age, and in what occupation they have been successful; and the number needing aid for economic or social adjustment. The immediate objectives were: (1) to determine the actual number of persons in California who are visually handicapped to the extent that they are classified as blind, and (2) to secure pertinent data relative to their social and economic status from a sufficiently large number of blind persons to insure the soundness of conclusions based upon these data.

Procedure

The first place of the actual work on the project consisted in requesting every public and private agency concerned with the welfare of the blind in the State, as well as interested individuals, to cooperate with the Bureau of Vocational Rehabilitation and the California Council for the Blind by sending in lists of names and addresses of all the blind and partially blind persons known to them. Almost every public and private agency in the State, as well as all national agencies concerned with the welfare of the blind, and many individuals cooperated fully in the work of the census and survey. As the lists were received they were carefully checked for duplications. Each new name was entered on a card and placed in a master file. A questionnaire and an accompanying letter from the president of the Council for the Blind was mailed to each person. After checking and making appropriate notations on the master card file, the questionnaires returned were submitted to the Research Project Statistical Section for analysis and tabulation. Finally a check was made in each county to insure the accuracy of the master card file on which the census was based.

The Census

A grand total of 7,518 names of blind and partially blind persons were obtained from the lists sent in, exclusive of all duplicates. There were approximately 7,000 blind found to be living in the State at the present time. So thoroughly has the State been covered, county by county,

that it seems fair to assume that while it is inconceivable that all of the blind were found, still the figure of 6,960 represents an exceedingly close estimate.

The Economic Survey.

A grand total of 3512 or approximately 50 per cent of the questionnaires was returned. Of the 6,960 blind persons recorded in the census, 3,966 or 57 per cent are males and 2,994 or 43 per cent are females.

Distribution of the Blind According to Sex

Sex	Number	Percent
Male	1,915	55.6
Female	1,539	43.8
Not stated	22	.6
Total	3,512	100.0

Age

Obviously the matter of age is an important factor in an economic survey. This is especially true in the case of the blind where the employable period is probably shorter than in the case of the sighted. If we assume that the employable period for the blind is from the ages of from 20 to 50, it will be seen that only approximately 22 percent of the blind population have a reasonable opportunity for employment and assuming that they may be otherwise qualified.

Distribution of the Blind According to Age

Age groups	Number	Percent
Below 10 years	4	.1
10-19 years	419	12.0
20-29 years	174	5.0
30-39 years	208	6.0
40-49 years	306	8.7
50-59 years	478	13.6
60 or over	1,911	54.4
Not stated	12	.2
Total	3,512	100.0

It will be noted that only a very small number of blind persons are under 20 years of age, 12.1 percent, while a surprisingly large number are over 60 years of age, 54.4 percent. This uneven distribution is due largely to the operation of two factors -- the results of years of excellent work done in the field of prevention of blindness, and the fact that a large number lose their sight late in life as the result of disease or accident.

Present Employment Status of the Blind.

There is a sharp difference of opinion relative to the ability of the blind to work efficiently and safely. Many maintain that they are capable on

suitable jobs and if given the opportunity could compete successfully with the sighted. Others believe that sheltered employment is the only solution of this problem. Probably the best opinion is that individual differences are just as marked among the blind as among the sighted and that they are capable and efficient on suitably selected jobs in about the same proportion. At any rate, data concerning their present employment status are obviously important. The number now employed is shown in the following table:

Distribution of the Blind According to Number Employed

	Number	Percent
Blind now employed.....	176	5.0
Blind not employed.....	3,199	91.1
Not stated.....	137	3.9
Total.....	3,512	100.0

Monthly Income

Only 88 persons of the 3,512 surveyed reported that they make even a bare living. Approximately 95 percent of the blind in California have no earned income at all, and so are wholly dependent economically, either upon relatives and friends or upon society. This is an incredible situation, but its truth can not be doubted by anyone familiar with the situation. The one significant thing which this table indicates is that definite, effective plans must be worked out and put into operation whereby this situation may be remedied. The tragic implication of this condition among the blind lies not so much in the extreme poverty of this class of persons as it does in the dangers of physical, mental, and spiritual deterioration to which their enforced idleness subjects them.

Conclusion.

It has been ascertained through the census that there are at least 6,960 blind persons living in California at the present time. This number includes only bona fide residents of the State who are economically blind. It is believed that the figure is accurate. Every name in the file was checked against the records of all public agencies dealing with the blind in each county of the State. If anything the figure is an understatement of the real total, since it is improbable that every blind individual in the State has been contacted. On the other hand, the search and study were so painstakingly made and every possible source of information so thoroughly exhausted that it is probable that the actual number of blind in California does not greatly exceed 7,000.

The fact that more than half of the blind persons in the State answered and returned the questionnaires assures the validity of the statistical data given in the report. On this sound basis conclusions may be safely drawn which reveal significant trends and afford a clear, accurate picture of the present economic and social status of the blind in California.

Important and necessary as these two steps are, it must be clearly understood that they are merely preliminary. The data obtained furnish a

definite point of departure from which intelligent and effective steps may now be taken toward a solution of the problems herein presented. The more complete information contained in the questionnaires will be made available to the public agencies concerned in order that specific needs and desires in individual cases may be met in so far as is possible and that plans may be made for general betterments in service for the blind.

It is the fervent hope of all whose efforts made possible the success of this census and economic survey of the blind in California that the problem of unemployment among the blind will soon be vigorously attacked. If the findings of this study are an aid in paving the way for a successful campaign, then the work will have been well done, and well worth the doing.

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